	Application No.	Applicant(s)
Notice of Allowability	10/791,231	CHITRAPU, PRABHAKAR R.
	Examiner Kamran Afshar, 571-272-7796	Art Unit 2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/27/2006*.

2. ☒ The allowed claim(s) is/are *40-61*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

            International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
    Paper No./Mail Date *03/02/04 & 5/12/04*

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☒ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or additions be

unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure

consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Scott

Wolinsky, Reg. No.: 46,413 on 1/27/2006.

The application has been amended as follows:

In The Claim(s):

Cancel claims 1-39 without prejudice.

40.   (new):   A mobile user terminal which communicates over a radio channel, the
mobile user terminal comprising:

(a) an application context modeler configured to generate communication application modeling
data;

(b) a physical modeler configured to generate radio related attribute data;

(c) a mobility modeler configured to generate position and movement information associated with
the mobile user terminal; and

(d) a cognitive radio resource controller in communication with the application context modeler,
the physical modeler and the mobility modeler, wherein the cognitive radio resource controller is
configured to use the radio channel based on the communication application modeling data, the radio
related attribute data and the position and movement information.

41.   (new):   The mobile user terminal of claim 40 further comprising:

(e) a channel processor in communication with the application context modeler, the physical
modeler and the mobility modeler, wherein the channel processor is configured to map application data to
the radio channel, receive data from the radio channel and direct the received data to the proper
destination.

42.   (new):   The mobile user terminal of claim 40 further comprising:

(e) a geographic database in communication with the physical modeler and the mobility modeler, wherein the geographic database stores geo-locations and location related attributes for the geo-locations.

43.   (new):   The mobile user terminal of claim 40 further comprising:

(e) a modem for modulating the mapped application data at baseband; and

(f) an antenna for transmitting the modulated data over the radio channel.

44.   (new):   The mobile user terminal of claim 40 wherein the application context modeler is configured to model an Internet browsing application.

45.   (new):   The mobile user terminal of claim 44 wherein the model of the Internet browsing application is based on at least one of packet session, packet calls and number, duration and separation of individual packets.

46.   (new):   The mobile user terminal of claim 40 wherein the application context modeler is configured to model a speech activity e-mail application.

47.   (new):   The mobile user terminal of claim 40 wherein the cognitive radio resource controller controls optimal transmission of packets over the radio channel.

48.   (new):   The mobile user terminal of claim 40 wherein the cognitive radio resource controller manages spectral resources to ensure that quality of service (QoS) of the radio channel is maintained.

49.   (new):   The mobile user terminal of claim 40 wherein the radio related attribute data includes at least one of multi-path attribute data, shadowing attribute data and Doppler attribute data.

50.   (new):   The mobile user terminal of claim 40 wherein the position and movement information includes at least one of geo-coordinates of the mobile user terminal, velocity of the mobile user terminal and topology of the route along which the mobile user terminal travels.

51.   (new):   A network which communicates with a plurality of mobile user terminals over a radio channel, the network comprising:

(a) an application context modeler configured to generate communication application modeling data;

(b) a physical modeler configured to generate radio related attribute data;

(c) a mobility modeler configured to generate position and movement information associated with the mobile user terminals; and

(d) a cognitive radio resource controller in communication with the application context modeler, the physical modeler and the mobility modeler, wherein the cognitive radio resource controller is configured to use the radio channel based on the communication application modeling data, the radio related attribute data and the position and movement information.

52.   (new):   The network of claim 51 further comprising:

(e) a channel processor in communication with the application context modeler, the physical modeler and the mobility modeler, wherein the channel processor is configured to map application data to the radio channel, receive data from the radio channel and direct the received data to the proper destination.

53.   (new):   The network of claim 51 further comprising:

(e) a geographic database in communication with the physical modeler and the mobility modeler, wherein the geographic database stores geo-locations and location related attributes for the geo-locations.

54.   (new):   The network of claim 51 further comprising:

(e) a modem for modulating the mapped application data at baseband; and

(f) an antenna for transmitting the modulated data over the radio channel.

55.   (new):   The network of claim 51 wherein the application context modeler is configured to model an Internet browsing application.

56.   (new):   The network of claim 55 wherein the model of the Internet browsing application is based on at least one of packet session, packet calls and number, duration and separation of individual packets.

57.   (new):   The network of claim 51 wherein the application context modeler is configured to model a speech activity e-mail application.

58.   (new):   The network of claim 51 wherein the cognitive radio resource controller controls optimal transmission of packets over the radio channel.

59.   (new):   The network of claim 51 wherein the cognitive radio resource controller manages spectral resources to ensure that quality of service (QoS) of the radio channel is maintained.

60.   (new):   The network of claim 51 wherein the radio related attribute data includes at least one of multi-path attribute data, shadowing attribute data and Doppler attribute data.

61.   (new):   The network claim 51 wherein the position and movement information includes at least one of geo-coordinates of the mobile user terminals, velocity of the mobile user terminals and topology of the route along which the mobile user terminals travel.

Allowable Subject Matter

2.   Claims 40-61 are allowed.

The following is an examiner's statement of reasons for allowance: 40-61.

With respect to claims 40, 51, Durpay (U.S. Patent 6,249,252 B1) is the closest prior art to the application invention which discloses a wireless location using multiple location estimator, and wireless network comprising a base station (BS) and a plurality of user equipment (UEs) (See Title, Abstract).

Joseph Mitola III & Gerald Q. Maguire, Jr., IEEE Personal Communication, August 1999, Discloses Cognitive Radio: Making Software Radio More personal.

However, the prior art of record fails to disclose singly or in combination or render obvious that the mobile user terminal comprising: an application context modeler configured to generate communication application modeling data; a physical modeler configured to generate radio related attribute data; a mobility modeler configured to generate position and movement information associated with the mobile user terminal; and a cognitive radio resource controller in communication with the application context modeler, the physical modeler and the mobility modeler, wherein the cognitive radio

resource controller is configured to use the radio channel based on the communication application

modeling data, the radio related attribute data and the position and movement information.

Any comments considered necessary by applicant must be submitted no later than the payment

of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such

submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

    a) Yea (U.S. 6,829,491 B1).

    b) Massey (U.S. Pub. No.: 2004/0037236 A1).

    c) Seki (U.S. 6,622,020 B1).

Any inquiry concerning this communication or earlier communication from the examiner should be

directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on

Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor,

Feild, Joseph can be reached @ (571) 272-4090. The fax number for the organization where this

application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application

Information Retrieval (PAIR) system. Status information for published applications may be obtained from

either Private PAIR or Public PAIR. Status information for unpublished applications is available through

Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC)

at 866-217-9197 (toll-free).

Kamran Afshar

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER